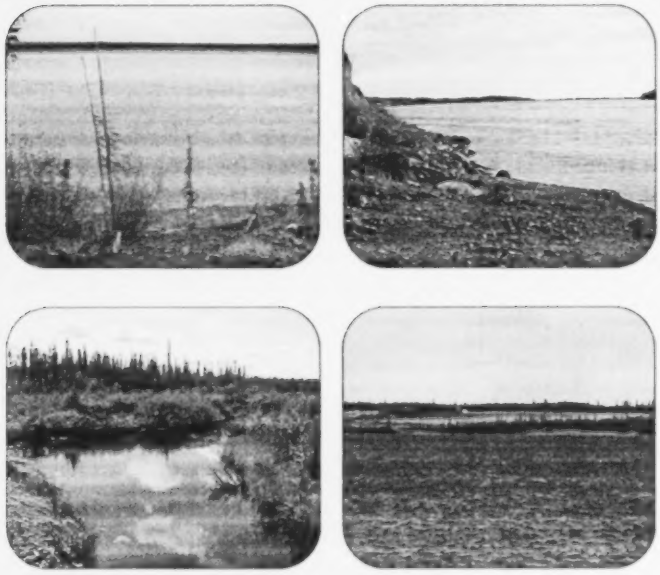
# Managing
# Drinking Water Quality
# in the Northwest Territories

## A Preventative Framework and Strategy



May 2005

Northwest Territories

# KEEPING NWT WATER CLEAN

# MAKING DRINKING WATER SAFE

# PROVING DRINKING WATER IS SAFE

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# EXECUTIVE SUMMARY

LEFT: WEKWETI SHORELINE

Government agencies at the community, territorial, and federal levels have an important role to play in ensuring the quality of drinking water in the Northwest Territories (NWT). *Managing Drinking Water Quality in the Northwest Territories* outlines a safe drinking water framework and strategy for the NWT, based on a review of other Canadian jurisdictions and the specific needs of the NWT. Together the framework and strategy provide a preventative system to safeguard NWT drinking water, and ultimately contribute to the health of Northwest Territories residents.

The *framework* is a multiple-barrier approach, calling for three major lines of defence to protect drinking water. They are 1) Keeping NWT Water Clean; 2) Making Drinking Water Safe; and 3) Proving Drinking Water Is Safe. The use of multiple barriers means that if one barrier fails, there are back-up systems and processes in place to protect the safety of drinking water.

The *strategy* identifies the specific barriers which comprise the multiple-barrier approach of the framework. It further outlines the actions associated with each barrier, a general timeframe for implementation, and the government agencies involved. The barriers are as follows:

| Keeping NWT Water Clean | Making Drinking Water Safe | Proving Drinking Water Is Safe |
|---|---|---|
| • Community Water Licensing<br>• Testing of Source Water Quality<br>• Coordinated Watershed Decision Making<br>• Effective Legislation<br>• Public Education | • Standards and Guidelines<br>• Trained and Certified Water Treatment Plant Operators<br>• Support For Water Treatment Plant Operators<br>• Water Treatment and Distribution Systems<br>• Effective Legislation<br>• Public Education | • Testing and Monitoring of Treated Water Quality<br>• Public Access to Water Quality Data<br>• Incident Tracking and Reporting<br>• Public Reporting On NWT Drinking Water Quality<br>• Assessment of Water Treatment Infrastructure and Operations<br>• Public Education |

The framework and strategy outlined in this document will be used to guide planning and decision-making for the management of drinking water quality over the coming years.

## 1.0 INTRODUCTION

The health of Northwest Territories (NWT) residents, our environment and our economy all depend on the effective management, protection and enhancement of natural resources. Preserving NWT water is a particularly important challenge, and the continued care and management of NWT water resources requires the participation and commitment of many. Communities, non-government agencies, businesses, all levels of government and the public in general must work together to ensure that a safe drinking water system is in place and operating effectively.

Many of the stakeholders involved in, and responsible for, the provision of safe community water supplies are identified in the 2001 document *Roles and Responsibilities in Providing Safe Drinking Water in the NWT*. They are:

- NWT residents
- Community Governments
- Government of the NWT (GNWT) Departments including:
  - Environment and Natural Resources (ENR)
  - Pubic Works and Services (PW&S)
  - Health and Social Services (H&SS) and the H&SS Authorities
  - Municipal and Community Affairs (MACA)
- Aboriginal Governments and Organizations
- Canadian Council of Ministers of the Environment
- the Northern Territories Water and Waste Association
- the Association of Professional Engineers, Geologists and Geophysicists of the NWT
- Federal Government Departments including:
  - Health Canada
  - Indian and Northern Affairs Canada
  - Environment Canada
  - Fisheries and Oceans Canada
- Regulatory and Water Boards including:
  - Mackenzie Valley Land and Water Board
  - Sahtu Land and Water Board
  - Gwich'in Land and Water Board
  - NWT Water Board
  - Mackenzie River Basin Board
  - Wek'èezhii Land and Water Board

ABOVE: FORT LIARD FILLING STATION

While all stakeholders have important roles to play in ensuring the quality of NWT drinking water, this document focuses specifically on government agencies at the community, territorial, and federal levels, unless otherwise stated. Stakeholders were consulted in the development of the framework and strategy in the summer and fall of 2003.

# INTRODUCTION

ABOVE: FORT PROVIDENCE PLANT
RIGHT: FORT PROVIDENCE WATER TRUCKS

This document presents a safe drinking water framework and strategy for the NWT. The framework is a three layer model based on best practice, and the strategy outlines a number of inter-related actions, some already in place, that are critical to ensuring the quality of NWT drinking water. Together, the framework and strategy aim to achieve the following goals in the management of drinking water quality:

- improved leadership
- improved accountability
- better cooperation between agencies
- enhanced community capacity
- effective monitoring and assessment of local drinking water systems
- effective legislation and standards
- improved public awareness
- improved research and available technologies

Further work is being done by the GNWT to address the implementation details of the framework and strategy. This includes the identification of outcomes, performance indicators, data requirements and cost information.

**[fact]**

There are 34 public water systems in the NWT: 27 of them get water from rivers or lakes, 4 of them get water from underground wells, 3 of the public water systems in the NWT get water trucked in from other communities.

## 2.0 BACKGROUND

Generally, community water supply sources in the NWT are abundant and less threatened by the kinds of potential contaminants associated with more populated parts of southern Canada. However challenges do exist. They include:

- developing or maintaining capacity in communities
- training for Water Treatment Plant Operators
- high staff turn-over
- changing regulations and legislation
- keeping community water licenses up-to-date
- maintenance issues at water facilities
- need for better communication between groups
- need for better public understanding
- remote communities and an increasing population
- technical support requirements
- industrial and economic growth
- need for consistency in water testing and sampling

To address these challenges, and following the drinking water incidents in Walkerton, Ontario and North Battleford, Saskatchewan, the GNWT established an Inter-Departmental Drinking Water Management Committee (Committee).

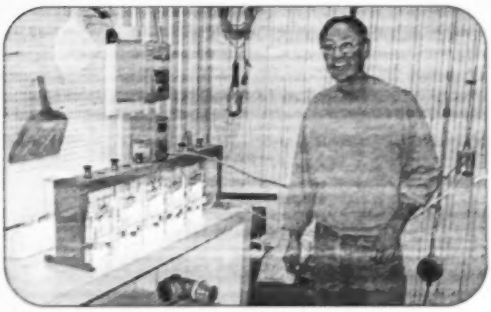
This Committee consists of senior management representatives from the four GNWT Departments that share the responsibility and accountability for safe drinking water. They are the Departments of MACA, PW&S, H&SS, and ENR. The Committee's purpose is to organize a coordinated approach to the management and administration of drinking water issues.

In 2001, the Committee developed a *Safe Drinking Water Initiative* outlining an initial workplan related to drinking water. As a result of the workplan, it was identified that a need exists to develop an overall NWT drinking water framework and strategy to provide coordination and structure to the GNWT's efforts toward management of drinking water quality.

### NWT SAFE DRINKING WATER INITIATIVE:

#### 2001 WORKPLAN PROJECTS

1. Identify Roles and Responsibilities for Providing Safe Drinking Water in the NWT
2. Assess Community Water Supply Systems and Operations
3. Identify Good Engineering Practices for Northern Utilities
4. Develop a Community Water Quality Database
5. Regulate the Certification Requirements of Water Treatment Plant Operators



ABOVE: FORT PROVIDENCE TEST STATION

## 3.0 SAFE DRINKING WATER

For this document, drinking water is defined as water intended primarily for human consumption but which has other household uses. It may be consumed directly as it comes from the tap, or indirectly in beverages or foods prepared with tap water. Other uses include such things as watering the garden, fire protection, washing vehicles, bathing and showering. This document does not cover bottled or packaged water.

Safe drinking water is drinking water that poses no hazard to health. This means it meets the requirements of the NWT *Public Health Act* and the Guidelines for Canadian Drinking Water Quality.

The NWT Drinking Water Framework and Strategy in this document are based on a review of principles and best practices in other Canadian jurisdictions, and the specific needs of the NWT.

### SAFE DRINKING WATER PRINCIPLES:

- Safe drinking water is necessary for public health
- Everyone has a role to play in keeping drinking water safe
- Overlapping activities are required to protect the water supply system from the many sources of contamination

### BEST PRACTICES:

- A layered approach which considers several lines of defence against contamination
- Prevention of the contamination of water sources such as lakes, rivers, streams, and groundwater sources
- Treatment of water, making it safe to drink
- Proper maintenance of water distribution systems so water does not become contaminated in its delivery
- Regular monitoring of drinking water quality and adherence to standards
- Qualified water system operators
- Regular assessment of drinking water systems to identify risks
- Reinforcement of drinking water safeguards through public education and awareness

[definition]

Contamination – The presence or unwanted transfer of a substance into drinking water, making it impure or harmful

## 4.0 NWT SAFE DRINKING WATER FRAMEWORK

A multiple barrier framework was selected for the NWT since this approach is universally recognized as the most comprehensive method for protecting drinking water quality. It calls for a series of safeguards, or barriers, along the water supply route to prevent contaminants from being introduced or making it through the drinking water system. Barriers can be physical barriers, such as chemical treatments or filters, or management barriers such as procedures and regulations which ensure the water system is operating properly. The use of multiple barriers means that if one barrier fails, there are back-up systems and processes to block the flow of any harmful impurities.

The NWT multi-barrier framework is based on a three-layer approach, each representing a fundamental line of defence: *keeping NWT water clean, making drinking water safe,* and *proving drinking water is safe.*

[definition]

Barriers – Safeguards or checkpoints along the water supply route to prevent contaminants from being introduced or making it through the drinking water system.

Framework – the conceptual foundation on which a strategy is built.

# NWT SAFE DRINKING WATER FRAMEWORK

## KEEPING NWT WATER CLEAN

In the NWT residents are fortunate to have some of the best water in the world. However, water is a resource that can sometimes be taken for granted. Like other jurisdictions, the NWT also faces challenges when it comes to protecting water resources. Contamination can exist naturally, and can also occur as a result of carelessness, forgetfulness, or ignorance.

All levels of government recognize the need to make the protection of source water a priority. In the NWT this is achieved by selecting the purest sources of water and protecting these sources from contamination. This requires a number of barriers to prevent contaminants from entering the drinking water system in the first place.

Currently the federal government has primary responsibility for source water management. GNWT Departments are involved in several partnerships that also undertake initiatives to promote the protection of source water.

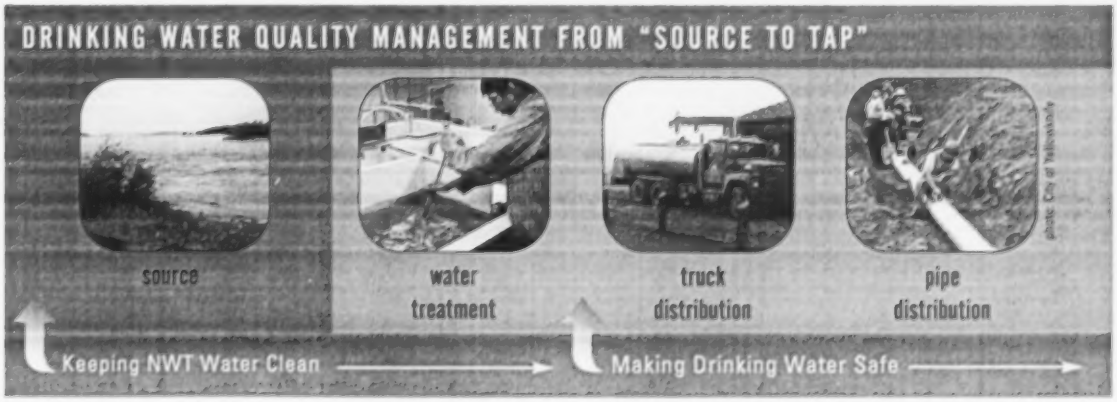
## MAKING DRINKING WATER SAFE

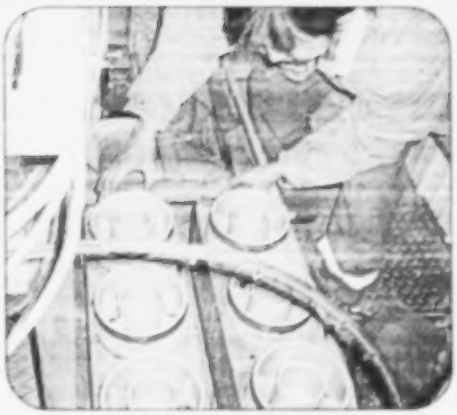
All water contains some impurities. These impurities sometimes come from man-made sources, but most often they come from natural sources such as rock, soil, sediment, vegetation, or the atmosphere with which the water comes into contact. Some of these impurities can make water look or taste bad while others can make it unsafe to drink.

Making water safe to drink involves several activities which remove natural or man-made impurities. This is achieved by determining what impurities are present in the water supply, then installing and operating treatment systems to remove or defend against the impurities.

## PROVING DRINKING WATER IS SAFE

As a final protection against unsafe drinking water, there are a number of safeguards which help to verify the quality of water being provided to residents. Where problems are identified, action is taken to correct them. Ongoing monitoring of water system operations and regular testing of water provide early notice of such problems. The results of this monitoring and testing must be communicated to residents to give them confidence in the quality of the water they use.

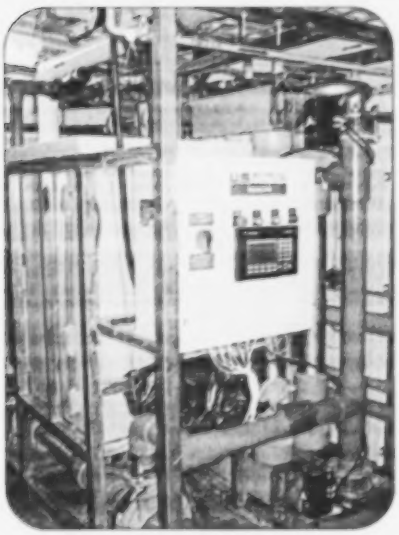




LEFT: WEKWETI WATER FILLING

RIGHT: TULITA PLANT MAINTENANCE

BELOW LEFT: TULITA MICROFILTRATION WATER TREATMENT PLANT



## 5.0 NWT SAFE DRINKING WATER STRATEGY

In order for the multi-barrier framework to be effective, a strategy is required to guide and coordinate the implementation of each layer of safeguards. The NWT Safe Drinking Water Strategy is to be a guide to stakeholders as they manage drinking water quality in the NWT. The strategy will be reviewed and updated regularly to ensure safe drinking water.

The following pages outline a NWT Safe Drinking Water Strategy in three distinct sections, one for each major line of defence: *keeping NWT water safe, making drinking water safe, and proving drinking water is safe.* Each section describes the proposed barriers associated with that particular line of defence, the various actions associated with each barrier, a general timeframe, and the government agencies involved.

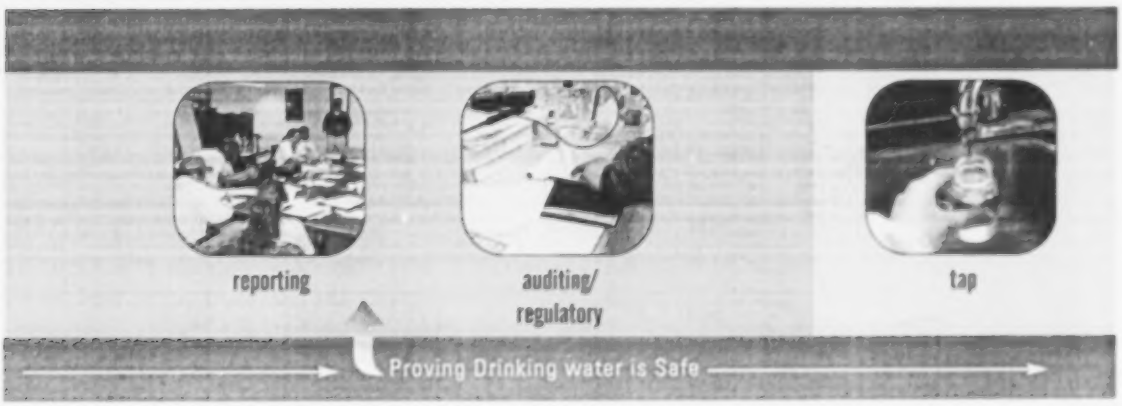


Photo: J.E. White

ABOVE: NWT LAKE
MIDDLE: TUKTOYAKTUK SOURCE WATER TESTING
BELOW: FORT PROVIDENCE INTAKE TO MACKENZIE RIVER

## 5.1 KEEPING NWT WATER CLEAN: BARRIERS

*Community Water Licensing* – Water licenses regulate the amount of water that can be taken from a source (such as a lake or river). They also outline the steps to minimize the possibility of harmful materials re-entering the source through spills or other negligent actions. Water licenses are issued to communities and to industrial or commercial developments that may impact the water source. The terms and conditions of the licenses are currently enforced by the Federal Government. Communities meeting all licensing requirements are well on their way to protecting the health of their water source.

*Testing of Source Water Quality* – Regular testing of the quality of source water provides advance warning of any problems and allows action to be taken quickly, if problems are identified. Regular testing also checks the effectiveness of water protection activities and helps identify treatment requirements. Increased awareness and quick responses increase public and stakeholder confidence that their water source is safe.

*Coordinated Watershed Decision Making* - A number of different agencies and levels of government are responsible for making decisions that affect drinking water sources. Many of these agencies are external to the GNWT. Creating an opportunity to bring stakeholders together regularly is expected to result in the protection of drinking water sources in an organized and efficient manner, with stakeholders being aware of their respective roles.

*Effective Legislation* – Legislation ensures that minimum standards for protecting water sources and the land around them are in place and enforceable, thereby helping to protect public health. Effective legislation helps regulators and officials enforce standards related to keeping water clean.

*Public Education* – A variety of methods can be used to communicate messages to the public about protecting water sources and conserving water. The public plays a key role in keeping water clean by understanding how their activities and the decisions they make affect their drinking water.

[definition]

Source Water – The rivers, lakes, streams, or ground water used to provide drinking water

Watershed – The land area which drains water into a river or other body of water

Strategy – a plan of action intended to accomplish specific goals

| BARRIERS | ACTIONS | | | AGENCIES |
|---|---|---|---|---|
| | COMPLETED | IN PROGRESS | FUTURE WORK | |
| 1 Community Water Licensing | About two thirds of all NWT communities with a water supply system now have the required water licenses | Work is progressing towards having all communities with up-to-date water licenses | Studies associated with the water licensing process will be undertaken as required | Communities working with Water Boards, MACA and Federal Govn't |
| 2 Testing of Source Water Quality | Some source water quality testing is occurring | A centralized tracking and monitoring system for source water quality is being developed | Data will be reviewed and analyzed for trends on an ongoing basis | PW&S, H&SS, MACA and Communities |
| 3 Coordinated Watershed Decision Making | An inter-departmental committee consisting of senior representatives from ENR, PW&S, MACA and H&SS has been formed | An inter-jurisdictional committee will be established to develop a source protection strategy | The Federal Government is working towards transferring the responsibility for water resource management to the GNWT and the Water Boards | Federal Government, ENR, MACA, Water Boards and Communities |
| | Water Boards currently monitor development through the water license approval process and send information on development applications to all stakeholders<br>The NWT and the Yukon have signed a *Transboundary Water Management Agreement* | Watershed areas for all public drinking water sources in the NWT will be identified<br>Emergency response plans are being developed<br>Communities will be assisted in developing by-laws that help protect watershed areas<br>Additional *Transboundary Water Management Agreements* are being negotiated | Watershed protection measures will be implemented for all NWT public drinking water sources<br>Watershed management strategies will be developed | Federal Government, MACA, ENR, H&SS, PW&S, Water Boards, Aboriginal Organizations and Communities |
| 4 Effective Legislation | *Public Water Supply Regulations* under the *Public Health Act* (NWT)<br>*Area Development Act* (NWT)<br>*Mackenzie Valley Resource Management Act* (Federal)<br>*Northwest Territories Waters Act* and *Regulations* (Federal) | The *Public Health Act* and the *Public Water Supply Regulations* are being updated to reflect best practices | The effectiveness of revised legislation will be monitored by stakeholders | Justice, PW&S, H&SS, ENR, Federal Government and Communities |
| 5 Public Education | A need has been identified for improved public education on the protection of drinking water sources | Education / promotional materials will be developed to inform the public of its role in source protection and water conservation | Education campaigns will be ongoing and updated regularly based on need | Federal Government, ENR, and Communities |

## 5.2 MAKING DRINKING WATER SAFE: BARRIERS

*Standards and Guidelines* – Appropriate standards for drinking water quality and guidelines for achieving these standards provide a solid and consistent foundation for stakeholders. Standards and guidelines are based on best practice, northern realities, and science-based research. The intent is that the public, stakeholders, and officials are clear about what is required of them to make water safe.

*Trained and Certified Water Treatment Plant Operators* – Water Treatment Plant (WTP) Operators are those persons who are directly responsible for water treatment, whether it be disinfection at a truck-fill station or at a facility using chemical treatment. Standardized training and certification for WTP Operators equips them to carry out their duties properly and builds community capacity. Qualified individuals know the prescribed standards and understand the consequences of failing to meet them. Training and certification, combined with effective evaluation, assures the public that treatment is being done correctly.

*Support For Water Treatment Plant Operators* – WTP Operators require technical support so they do not have to make decisions in isolation, and to better prepare them to address issues such as unexpected staff turnover, equipment failure, source water quality changes, etc.

*Water Treatment and Distribution Systems* – Adequate financial resources are required for operation, upgrade and replacement of water treatment and distribution systems so that equipment is well maintained, and necessary improvements to infrastructure are carried out in a timely fashion.

*Effective Legislation* – Effective legislation establishes minimum standards for testing and for operator certification, based on best practices. It also sets the criteria for safe drinking water quality. Legislation concerning safe drinking water means regulators and officials are better able to enforce standards.

*Public Education* – It is necessary to communicate to the public the importance of maintaining healthy practices, so they understand their own role and responsibility in making water safe. Such practices include conservation, the use of treated water, and proper tank cleaning.

LEFT: FORT PROVIDENCE OPERATOR STIRRING FILTER BED DURING BACKWASH

RIGHT: FORT LIARD FILTER CONTROL PANEL

[definition]

Treatment – the process of making water safe to drink by removing harmful impurities

| BARRIERS | ACTIONS | | | AGENCIES |
|---|---|---|---|---|
| | COMPLETED | IN PROGRESS | FUTURE WORK | |
| 1 Standards and Guidelines | H&SS participated on the Federal Provincial Territorial Committee on Drinking Water which develops the Guidelines for Canadian Drinking Water Quality | PW&S has developed a best practices manual for northern water and sewer systems<br>MACA will review standards and criteria for water supply systems and will update as needed | Regular review and updating | MACA, H&SS, and PW&S |
| 2 Trained and Certified Water Treatment Plant Operators | MACA provides training and oversees certifying WTP Operators in the NWT | Regulations for the certification of WTP Operators are being considered<br>The GNWT trains WTP Operators. Training programs are being updated and expanded. Ongoing operational reviews monitor and evaluate the effectiveness of this training. | The certification of WTP Operators will be formalized | MACA, PW&S, H&SS, and Communities |
| 3 Support for Water Treatment Plant Operators | PW&S provides technical assistance to WTP Operators and communities | Emerging technologies that are applicable for NWT water treatment are being identified | Regional expertise to provide WTP Operator support will be developed | PW&S and MACA |
| 4 Water Treatment and Distribution Systems | MACA has invested in upgrading water supply systems and has provided on-going operational funding to communities | The *Water and Sewage Services Policy* is being reviewed<br>Infrastructure and operational needs, including water treatment and distribution improvements, are being identified<br>Communities will be assisted in developing and implementing suitable water rates<br>Support and advice will be given to communities to ensure water delivery contracts incorporate safe practices. | Support will be provided for infrastructure and operational changes required to meet new drinking water quality guidelines | MACA, and Communities |
| 5 Effective Legislation | Public Water Supply Regulations exist under the *Public Health Act* | The *Public Health Act* and Public Water Supply Regulations are being updated based on best practices | The effectiveness of revised legislation will be monitored by stakeholders | Justice, MACA, PW&S, H&SS, Federal Government, and Communities |
| 6 Public Education | NWT Housing Corporation, H&SS, and PW&S provide information on cleaning household water tanks | Public education on house tank cleaning practices and the use of treated vs. raw water will be enhanced | Education campaigns will be ongoing and regularly updated | H&SS, and Communities |

## 5.3 PROVING DRINKING WATER IS SAFE: BARRIERS

*Testing and Monitoring of Treated Water Quality* – Proper testing and monitoring verifies the quality of drinking water and allows for quick intervention as required. All test facilities are approved by the Department of H&SS. New technology may increase the effectiveness of testing and reduce associated costs.

*Public Access to Water Quality Data* – Public access to water quality data keeps the public informed and allows them to make informed decisions about drinking water usage.

*Incident Tracking and Reporting* – Incident tracking and reporting lets the public know if there is a water quality problem, how to deal with it, and what actions are being taken to correct it. This holds officials accountable to the public, builds confidence in the system, and provides an opportunity for public education.

*Public Reporting on NWT Drinking Water Quality* – Reporting provides an annual public account of the status of drinking water quality in the NWT. It allows for comparison of information, and provides an opportunity for highlighting trends and the discussion of major issues.

*Assessment of Water Treatment Infrastructure and Operations* – Regular assessments help ensure that Water Treatment Plant infrastructure is in good condition, and is being operated and maintained safely.

*Public Education* – Informing the public about what testing is being done, the testing results, and who is responsible, helps assure them that their water supply is safe and reliable, and allows them to take action when they sense a problem.

BELOW: PAULATUK OPERATOR DOING CHLORINE TESTING

ABOVE: FORT MCPHERSON MONITORING

| BARRIERS | ACTIONS | | | AGENCIES |
|---|---|---|---|---|
| | COMPLETED | IN PROGRESS | FUTURE WORK | |
| 1 Testing and Monitoring of Treated Water Quality | Daily, monthly and annual water sampling procedures have been developed | Roles and responsibilities for water sampling are being clarified<br>Resource requirements are being identified | Refinement of the sampling process will occur in response to changes in legislation, technology and best practices | H&SS, PW&S and Communities |
| 2 Public Access to Water Quality Data | A community water quality database has been developed and is publicly accessible on the GNWT website | The on-line database will be expanded to include three years of water quality data for all communities | The on-line database will be updated on an ongoing basis | PW&S, H&SS and Communities |
| 3 Incident Tracking and Reporting | Environmental Health Officers keep records of all 'boil water' advisories<br>ENR and the Water Boards track spills of hazardous materials | An online database to report incidents of negative water quality and measures taken to correct these situations is being developed | The on-line incident reporting database will be updated on a regular basis | PW&S, H&SS and Communities |
| 4 Public Reporting on NWT Drinking Water Quality | The need for regular public reporting of water quality issues has been identified | A report format is being developed and a first annual report will be published in 2006 | A report on NWT water quality will be published annually | MACA, ENR and PW&S |
| 5 Assessment of Water Treatment Infrastructure and Operations | Comprehensive infrastructure and water supply reviews are complete in a majority of communities | Infrastructure and operational reviews are being used to identify short term corrective action and long term planning requirements | Operational and infrastructure reviews will be updated on an on-going basis | MACA, PW&S, H&SS and Communities |
| 6 Public Education | There is a need to improve public awareness of the quality of drinking water and the roles and responsibilities of various stakeholders | Public education material is being developed and will be distributed | Education campaigns will be on-going and updated regularly | H&SS, MACA, Federal Government and Communities |

**WEB LINK TO NWT WATER QUALITY DATABASE**
http://www.pws.gov.nt.ca/Water/homepage.asp

# CONCLUSION AND CONSULTATION

## 6.0 CONCLUSION

This document has outlined a framework for managing drinking water quality in the NWT. The framework is a multiple-layered approach, with a network of barriers in place under each of the three lines of defence: *keeping NWT water clean, making drinking water safe,* and *proving drinking water is safe.* Together they provide a preventative system to safeguard NWT drinking water, and ultimately contribute to the health of Northwest Territories residents.

Based on this framework, the document has further proposed a safe drinking water strategy. Through the implementation of the specific actions proposed, NWT residents will benefit from an improved drinking water system through:

- multi-barrier protection of drinking water
- improved monitoring and assessment of local drinking water systems
- improved leadership, accountability, and capacity
- better co-operation between agencies
- improved public understanding and knowledge through education
- more effective legislation and standards

## 7.0 NEXT STEPS

The framework and strategy outlined in this document will be used to guide planning and decision-making for the management of drinking water quality over the coming years. Implementation requirements such as outcomes, performance indicators, data needs and associated costs are being developed by the GNWT. As the operating environment changes and improvements to best practices emerge, the framework and strategy will be adjusted to ensure continued safe drinking water management in the NWT.

Photo: J.E. White

ABOVE: NWT RIVER

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## AND OTHER WEBSITES OF INTEREST

## REFERENCES


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Canadian Environmental Assessment Act – http://laws.justice.gc.ca/en/C-15.2/

Department of Health and Social Services, GNWT – http://www.hlthss.gov.nt.ca/Features/Programs_and_Services/progandserv.htm

Department of Municipal and Community Affairs, GNWT – http://www.maca.gov.nt.ca/

Department of Resources, Wildlife and Economic Development, GNWT – http://www.gov.nt.ca/RWED/index.html

Department of Public Works and Services – http://www.pws.gov.nt.ca/

Gwich'in Land and Water Board – http://www.glwb.com/

Mackenzie Valley Land and Water Board – http://www.mvlwb.com/html/

Northwest Territories Water Board – http://infosource.gc.ca/Info_1/NTW-e.html

Public Water Supply Regulations – http://www.canlii.org/nt/regu/pdf/REG313.pdf

Sahtu Land and Water Board – http://www.slwb.com/

Northwest
Territories